

102.(currently amended) Enzyme component system according to claim 101, wherein enzymes of class 3.1.1.3 lipases (triacylglycerol lipase, triglyceroacyl hydrolases) are used as system component 1.

103.(currently amended) Enzyme component system according to claim 101, wherein enzymes of class 3.5.1.4 amidases, or class 3.5.5.1, nitrilases, are used as system component 1.

104. (currently amended) Enzyme component system according to claim 101, wherein enzymes of class 3.1.1.3 (lipases) are obtained from the group of organisms, consisting of *Candida antarctica*, *Candida rugosa*, *Candida lipolytica*, *Candida cylindraceae*, *Candida spec.*, *Geotrichum candidum*, *Humicola lanuginosa*, *Penicillium cambertii*, *Penicillium roquefortii*, *Aspergillus spec.*, *Mucor javanicus*, *Mucor mehei*, *Rhizopus arrhizus*, *Rhizopus niveus*, *Rhizopus delamar*, *Rhizopus spec.*, *Chromobacterium viscosum*, *Pseudomonas cepacia*, *Pseudomonas spec.*, wheat seedlings and pancreas.

105. (currently amended) Enzyme component system according to claim 101, wherein it contains enzymes from fungi, bacteria, animals or plants obtained from natural organisms or organisms modified by genetic engineering prothetic groups of enzymes or part of enzymes (containing the active centre) modified by specific enzymatic or chemical treatments

106. (currently amended) Enzyme component system according to claims 101 and 105, wherein the enzymes of classes 3.5.1.4 and 3.5.5.1 are obtained from the group of micro-organisms consisting of *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas acidovorans*, *Pseudomonas spec.*, *Aspergillus nidulans*, *Aspergillus spec.*, *Brevibacterium spec.*, *Streptococcus pneumoniae* and *Rhodococcus spec.*

107. (cancelled) Enzyme component system according to claims 101 and 105, wherein as modified enzymes or part of enzymes prothetic groups or mimicking substances mimicking the active centre of the respective enzyme are used as enzymatic catalysts.

108.(currently amended) Enzyme component system according to claim 101, wherein it contains as system component 2, one or more compounds selected from the group of saturated, monounsaturated or polyunsaturated fatty acids consisting of C₆ to C₂₆ fatty acids according to Appendix 1.

109. (currently amended) Enzyme component system according to claim 108, wherein it contains as system component 2) tetradecanoic acid (myristic acid) or dodecanoic acid (lauric acid).

110. (currently amended) Enzyme component system according to claim 101, wherein it contains as system component 3) at least one oxidant selected from hydrogen peroxide (H₂O₂), a compound selected from the group of organic peroxides consisting of Mg-monoperoxy-phthalate, di-tert-butyl peroxide, cumene hydroperoxide, lauroyl peroxide, 3-chloroperoxy-benzoic acid, dicumyl hydroperoxide, methyl ethyl ketone peroxide, benzoyl peroxide, diperoxydodecanedioic acid Na salt and compounds selected from the group of per-compounds consisting of perborate, persulfate, percarbonate, perphosphate, percarbamide, perchlorate.

111. (currently amended, previously claim 112) Enzyme component system according to claim 101 and 110, wherein it contains H_2O_2 , as system component 3).

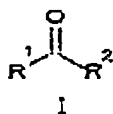
112. (currently amended, previously claim 111) Enzyme component system according to claim 101 and 110, wherein it contains as system component 3) H_2O_2 -activating ions selected from the group of transition metals consisting of Mo^{6+} , W^{6+} , V^{5+} or compounds selected from the group cyano-compounds consisting of nitrilamines or dicyandiamines.

113. (currently amended) Enzyme component system according to claim 101 and 110, wherein it contains as system component 3) H_2O_2 generated in situ from glucose and GOD and O_2 .

114. (currently amended) Enzyme component system according to claim 101 and 110, wherein it contains as system component 3) besides per-compounds also a bleaching activator: TAED (tetraacetythylenediamine), TAGU (tetraacetylglucuril) and iso-NOBS (sodium p-isononaoxy- benzenesulfonate).

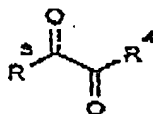
115. (currently amended) Enzyme component system according to claims 101 and 110 wherein it contains as system component 3) besides the peroxides or per-compounds also air or oxygen wherein air and (O_2) oxygen can be used at atmospheric pressure or at a slightly positive pressure of up to 2 bar.

116. (currently amended) Enzyme component system according to claim 101, wherein it contains as system component 4) at least one ketone of general formula I, wherein



the R^1 and R^2 groups can be equal or different and denote aliphatic or aromatic groups, or, the R^1 and R^2 groups can form a ring containing besides carbon also heteroatoms selected from nitrogen, oxygen and sulfur.

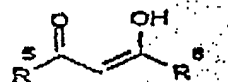
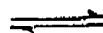
117. (currently amended) Enzyme component system according to claim 101, wherein it contains as system component 4) a 1,2-diketone of formula II, a 1,3-diketone of formula III or a polyketone (polyketide) as well as a tautomeric enol of formula IV,



II



III



IV

wherein the R^3 to R^6 groups (,once again,) can be equal or different and denote aliphatic or aromatic groups, or, groups R^3 and R^4 and groups R^5 and R^6 , together, can form a ring containing besides carbon also heteroatoms selected from nitrogen, oxygen or sulfur.

118. (currently amended) Enzyme component system according to claim 101, wherein it contains as system component 4) carbonyl compounds selected from the group consisting of hydroxyketones, 1,3-unsaturated ketones, oxydicarboxylic acid, quinones and halogenated ketones.

119. (currently amended) Enzyme component system according to claim 101, wherein it contains as system component 4) a compound selected from the group of those listed in Appendix 2.

120. (currently amended) Enzyme component system according to claim 101, wherein it contains additionally a polymerization catalyst: a phenolic substance or polycyclic compound with several oxidizable hydroxyl groups according to Appendix 3.

121. (currently amended) Enzyme component system according to claims 101, wherein it contains add to it as an additionally an enzymatic oxidation system with enzyme action-enhancing compounds, said system containing consists of:

- a) at least one suitable oxidation catalyst
- b) at least one suitable oxidant
- c) at least one mediator selected from the group of N-hydroxy compounds consisting of hydroxylamines, hydroxylamine derivatives, hydroxamic acids, hydroxamic acid derivatives, aliphatic, cycloaliphatic, heterocyclic or aromatic compounds containing at least one N-hydroxy, oxime, N-oxy or N,N'-dioxy function or at least one mediator from the group of amides consisting of hydrazides or 1,2,4-triazolidin-3,5-diones (urazoles) or at least one mediator from the group of imides consisting of hydantoins, or at least one mediator from the group of oxocarbons.

122. (currently amended) Enzyme component system according to claim 101, wherein it contains add to it as an additionally an enzymatic oxidation system with enzyme action-enhancing compounds, said system containing:
at least one mediation enhancer selected from the group consisting of carbonyl compounds, aliphatic ethers, phenol ethers or olefins (alkenes) or at least one mediation enhancer selected from the group consisting of NO-, NOH- and HRN-OH compounds or amides consisting of hydrazides or urazoles or imides consisting of hydantoins or oxocarbons.

123. (currently amended) Enzyme component system according to claim 101, wherein it contains add to it as an additionally an enzymatic oxidation system with enzyme action-enhancing compounds, said system containing:
at least one mediation enhancer selected from the group consisting of cation radical-generating substances, of the phenothiazine or phenoxazine type or of the (R=N-N=R) type (ABTS) or from the group of aryl-substituted alcohols (nonphenols) consisting of veratryl alcohol or from the group of phenol derivatives consisting of p-hydroxycinnamic acid, 2,4-dichlorophenol, p-hydroxy-benzenesulfonate, vanillin (4-hydroxy-3-methoxybenzaldehyde), p-hydroxybenzoic acid, 5-amino-2-hydroxybenzoic acid (5-aminosalicylic acid) or Wurster-type radical cation compounds consisting of p-phenylenediamine, N,N-dimethyl-p-phenylenediamine, N,N-diethyl-p-phenylenediamine, N,N,N',N'-tetramethyl-p-phenylenediamine, 2,3,5,6-tetramethyl-p-phenylenediamine or from the group of radical anions consisting of semiquinones, which can be generated by enzymatic oxidation of hydroquinones.

118. (currently amended) Enzyme component system according to claim 101, wherein it contains as system component 4) carbonyl compounds selected from the group consisting of hydroxyketones, 1,3-unsaturated ketones, oxydicarboxylic acid, quinones and halogenated ketones.

119. (currently amended) Enzyme component system according to claim 101, wherein it contains as system component 4) a compound selected from the group (as) of those listed in Appendix 2.

120. (currently amended) Enzyme component system according to claim 101, wherein it contains in addition occasionally a polymerization catalyst, as a phenolic substance or polycyclic compound with several oxidizable hydroxyl groups according to Appendix 3.

121. (currently amended) Enzyme component system according to claims 101, wherein it contains add to it as an additional system in addition an enzymatic oxidation system with enzyme action-enhancing compounds, said system containing consists of:

- a) at least one suitable oxidation catalyst
- b) at least one suitable oxidant
- c) at least one mediator selected from the group of N-hydroxy compounds consisting of hydroxylamines, hydroxylamine derivatives, hydroxamic acids, hydroxamic acid derivatives, aliphatic, cycloaliphatic, heterocyclic or aromatic compounds containing at least one N-hydroxy, oxime, N-oxy or N,N'-dioxy function or at least one mediator from the group of amides consisting of hydrazides or 1,2,4-triazolidin-3,5-diones (urazoles) or at least one mediator from the group of imides consisting of hydantoin, or at least one mediator from the group of oxocarbons.

122. (currently amended) Enzyme component system according to claim 101, wherein it contains occasionally add to it as an additional system an enzymatic oxidation system with enzyme action-enhancing compounds, said system containing:
at least one mediation enhancer selected from the group consisting of carbonyl compounds, aliphatic ethers, phenol ethers or olefins (alkenes) or at least one mediation enhancer selected from the group consisting of NO-, NOH- and HRN-OH compounds or amides consisting of hydrazides or urazoles or imides consisting of hydantoin or oxocarbons.

123. (currently amended) Enzyme component system according to claim 101, wherein it contains add to it as an additional system occasionally an enzymatic oxidation system with enzyme action-enhancing compounds, said system containing:
at least one mediation enhancer selected from the group consisting of cation radical-generating substances, of the phenothiazine or phenoxazine type or of the (R=N-N=R) type (ABTS) or from the group of aryl-substituted alcohols (nonphenols) consisting of veratryl alcohol or from the group of phenol derivatives consisting of p-hydroxycinnamic acid, 2,4-dichlorophenol, p-hydroxybenzenesulfonate, vanillin (4-hydroxy-3-methoxybenzaldehyde), p-hydroxybenzoic acid, 5-amino-2-hydroxybenzoic acid (5-aminosalicylic acid) or Wurster-type radical cation compounds consisting of p-phenylenediamine, N,N-dimethyl-p-phenylenediamine, N,N-diethyl-p-phenylenediamine, N,N,N',N'-tetramethyl-p-phenylenediamine, 2,3,5,6-tetramethyl-p-phenylenediamine or from the group of radical anions consisting of semiquinones, which can be generated by enzymatic oxidation of hydroquinones.

124. (currently amended) Enzyme component system according to claim 101, wherein it contains add to it as additional enzymatic oxidation catalyst enzymes selected from the group of oxidoreductases consisting of classes 1.1.1. to 1.97:
 cellobiose: oxygen-1-oxidoreductase (cellobiose oxidase) (1.1.3.25),
 cellobiose: quinone-1-oxidoreductase (1.1.5.1), bilirubin oxidase (1.3.3.5), cytochrome oxidase (1.9.3), oxygenases, lipooxygenases (1.13, 1.14), superoxide dismutase (1.15.11), ferrioxdase consisting of ceruloplasmin (1.16.3.1); enzymes selected from the group 1.10 consisting of catechol oxidase (tyrosinase) (1.10.3.1), L-ascorbate oxidase (1.10.3.3), O-aminophenol oxidase (1.10.3.4) and laccase (benzodiols:oxygen oxidoreductase) (1.10.3.2); enzymes selected from the group 1.11 consisting of cytochrome C peroxidase (1.11.1.5), catalase (1.11.1.6), peroxidase (1.11.1.7), iodide peroxidase (1.11.1.8), glutathione peroxidase (1.11.1.9), chloride peroxidase (1.11.1.10) and L-ascorbate peroxidase (1.11.1.11), phospholipid hydroperoxide glutathione peroxidase (1.11.1.12), manganese peroxidase (1.11.1.13) and diarylpropane peroxidase (ligninase, lignin peroxidase) (1.11.1.14).

125. (currently amended) Enzyme component system according to claims 101 and 124, wherein enzymes selected from the group of oxidoreductases consisting of laccases or peroxidases or both are used as oxidation catalysts.

126. (currently amended) Enzyme component system according to claim 124 and 125, wherein it contains laccases or peroxidases or both selected from the group of white rotting fungi consisting of *Trametes versicolor*, *Trametes spec.*, *Phlebia spec.*, *Pleurotus spec.*, *Phanerochaete chrysosporium*, *Agaricus spec.* and also other fungi, bacteria, plant and animal cells obtained from natural organisms or organisms modified by genetic engineering.

127. (cancelled) Enzyme component system according to claim 101, 124 to 126, wherein it contains modified enzymes (enzyme constituents) prosthetic groups or mimicking substances are used as the enzymatic catalysts.

128. (currently amended) Enzyme component system according to claim 101 and 124 wherein it employs as additional oxidants air, oxygen, ozone, a compound selected from the group of peroxides consisting of H_2O_2 , an organic peroxide, a compound selected from the group of peracids consisting of peracetic, performic, persulfuric, pernitric, metachloroperoxybenzoic and perchloric acid, a compound selected from the group of per-compounds consisting of a perborate, percarbonate and persulfate, or oxygen species and the radicals thereof consisting of the OH, OOH and OH^+ radicals, superoxide (O_2^-), dioxygenyl cation (O_2^+), singlet oxygen, ozonide (O_3^-), dioxiranes, dioxitanes or Fremy radicals.

129. (currently amended) Enzyme component system according to claim 101 and 121, wherein additionally mediators and mediator enhancers are used and that these compounds are such those are shown in Appendix IV and IVa.

130. (currently amended) Enzyme component system according to claims 101, 121 and 129, wherein the additional mediator/mediator enhancer ratio is from 5000:1 to 5:1.

131. (currently amended) A process for the delignification, modification^{or} bleaching of cellulose or wood pulps from wood or annual plants, high yield wood pulps from groundwood and refiner pulp or deinked pulps comprising treatment of the cellulose or pulps with the enzyme component system of claim 101.

132. (currently amended) The method of claim 131, wherein the treatment ^{with} of the enzyme component system is carried out at a pH from 2 to 11, at a temperature from 20° to 95 °C, at a pulp consistency from 0.5 to 40%, in the presence of oxygen or air at atmospheric pressure or a slightly positive pressure (up to 2 bar); wherein system component 1 is lipase from *Humicola lanuginosa* at a concentration from 0.05 to 5 mg and amidase from *Pseudomonas aeruginosa* at a concentration from 40 to 200 IU; system component 2, one or more fatty acids, C₆ to C₂₆, at a concentration from 0.05 to 20 mg; system component 3, peroxides at a concentration from 0.05 to 20 mg (100%); ^{component} system component 4, ketone at a concentration from 0.05 to 20 mg, each ~~case~~ based on 1 g of absolutely dry pulp.

133. (currently amended) The method of claim 131, whereby an acid wash or a Q-step (chelating step) is used before or after the treatment with the enzyme component system and the acid wash is carried out at 60-120 °C, at pH 2 to 5.5, for 30-90 min and at 4%-20% pulp consistency, and the Q-step is carried out with 0.05% -1 % of chelator compound at 60°-100°C, at pH 2 to 5.5 for 30-90 min and at a pulp consistency of 4%-20%.

134. (currently amended) The method of claim 133, whereby the acid wash or the Q-step are carried out for 1 hour at 60°-90°C, at pH 2 to 5 and at 10% pulp consistency.

135. (currently amended) The method of claim 131, whereby said system can be used before or after any possible treatment of the pulp by single or multiple digestion, bleaching steps or other pre- and post-treatments; (such as) alkaline bleaching, alkaline extraction, washing, acid treatment, Q-step, O₂-delignification step, peroxide bleaching step, O₂-promoted peroxide step, pressurized peroxide step, peracid step, peracid- promoted O₂ or peroxide step, ozone bleaching step, dioxirane step, polyoxymetalate step, Cl₂-delignification step, ClO₂- bleaching step, Cl₁₂ /ClO₂- bleaching step, reductive bleaching steps, sulfonation steps, NO/NO₂ treatments, nitrosylsulfuric acid treatment, swelling steps, enzyme treatments selected from the group of hydrolases consisting of cellulases, xylanases, mannases, pectinases, proteinases, lipases, amidases, or selected from the group of oxidoreductases consisting of laccases, peroxidases, or several combined treatments.

136. (currently amended) The method of claim 131, whereby a swelling step is carried out with the aid of substances selected from the group of glycols consisting of propylene glycol, ethylene glycol, ethylene glycol dimethyl ether solvents; alcohols consisting of methanol, ethanol, butanol, amyl alcohol, cyclohexanol, benzyl alcohol and chlorohydrin; phenols consisting of methylphenols and methoxyphenols; aldehydes consisting of formaldehyde and chloral; mercaptans consisting of butyl mercaptan, benzyl mercaptan and thioglycolic acid; organic acids consisting of formic acid, acetic acid and chloroacetic acid; amines consisting of ammonia and hydrazine; hydrotropic solvents consisting of concentrated solutions of sodium benzoate, ^{and} other basic solvents consisting of OH-/H₂O or OH-/alcohol and benzenes, pyridines, dioxane and ethyl acetate.

137. (currently amended) The method of claim 131, whereby ^{the group consisting of} (there is additionally added to the reaction solution) a complexing agent selecting from ethylenediaminetetraacetic acid (EDTA), diethylenetriaminepentaacetic acid (DTPA), hydroxy-ethylenediaminotriacetic acid (HEDTA), diethylenetriaminopenta-methylenephosphonic acid (DTMPA), nitrilotriacetic acid (NTA), polyphosphoric acid (PPA) or other complexing agents for iron, manganese or copper: diethylamine or hydroxylamine ~~is added~~.

138. (currently amended) The method of claim 131, said process being carried out in several treatment steps and whereby between each step a washing or washing and extraction step with alkaline hydroxide solution is applied, or neither washing nor extraction takes place.

For the following patent claims (claim 139 to 150) finally withdrawn from further consideration pursuant to 37 CFR 1.142 (b) the Commissioner is respectfully urged -in view of the foregoing- (according to 37 CFR 1.144) for a:

PETITION FROM REQUIREMENT FOR RESTRICTION

As a precaution the same PETITION FROM REQUIREMENT FOR RESTRICTION is also respectfully urged for the cancelled claims (Examiner's Amendment, Office Action from 25th October 2002) as claim 107, 111, 113, 114, 120-127, 129-138.

The arguments are as follows:

1) The general inventive concept -as several times pointed out - is the generation of active oxygen species e.g. dioxiranes, i.e. the invention claims an innovative oxidation system which can be used for many applications including the mentioned procedures in the presented patent application.

This generation takes place by the reaction of a lipase, fatty acids and peroxide → formation of per fatty acids.

In the presence of an appropriate ketone the formation of the mentioned dioxiranes can occur.

Additionally an other important aspect of the general inventive concept is:

2) The claimed treatment applications have more or less the same basic material as "system substrate" which is oxidized by the claimed oxidation method.

This is the case for the treatment of ligno-cellulose containing material such as the treatment of pulp (delignification/bleaching), waste water treatments of pulp and paper waste water, production of particle boards, fibre boards etc., deinking of waste paper, textile treatment (with exception of wool).

For the detergent application, chemical oxidation, treatment of general waste water and wool treatments the inventive concept is like 1) → claimed products which are oxidized by the claimed oxidation method.

The version is formally corrected according to your requirements.

Favourable reconsideration of the restriction requirement is respectfully requested.

In this respect a discussion in Washington is kindly proposed. Due to the fact that I will attend a symposium in Madison (WI) from 9th to 12th of June a meeting during this stay is preferred from my side.

Patent claims

139. (currently amended) *for mechanical pulp*
 A process for the treatment of paper production waste water *selected from the group consisting of*
 (grinder wastewater, TMP wastewater) and of waste water from other branches of the industry, such as wood pulp waste water and textile production waste water and other waste waters, comprising treatment of these waste waters with the enzyme component system of claim 10), whereby the reaction of the enzyme component system is carried out at pH 2 to 11, at a temperature from 20° to 95°C, in the presence of oxygen or air at atmospheric pressure or slightly positive O₂ pressure (up to 2 bar), wherein system component 1 is lipase from *Aspergillus spec.* at a concentration from 0.05 to 50 mg; system component 2 ^{is} one or more

fatty acids, C₆ to C₂₆, at a concentration from 0.05 to 200 mg; system component 3^h peroxides at a concentration from 0.05 to 200 mg (100%); system component 4^h ketone at a concentration from 0.05 to 200 mg, ~~and that a polymerization catalyst, is used at a concentration from 0.005 to 200 mg,~~ the concentrations in all cases being based on 1 litre of waste water.

140. (currently amended) A process for the production of lignin solutions or gels and of the corresponding binders/adhesives, and for the production of wood-based composites, comprising production of these compounds with the enzyme component system of claim 101, whereby the reaction of the enzyme component system is carried out at pH 2 to 11, at a temperature from 20° to 95°C, in the presence of oxygen or air at atmospheric pressure or slightly positive O₂ pressure (up to 2 bar), wherein system component 1 is lipase from *Humicola lanuginosa* at a concentration from 0.05 to 50 mg; system component 2^h one or more fatty acids, C₆ to C₂₆, at a concentration from 0.05 to 200 mg; system component 3^h peroxides at a concentration from 0.05 to 200 mg (100%); system component 4^h ketone at a concentration from 0.05 to 200 mg, ~~and that a polymerization catalyst, is used at a concentration from 0.005 to 200 mg,~~ the concentrations in all cases being based on 1 litre of waste water.

141. (currently amended) A process for the enzymatic printing ink removal during the deinking of waste paper, comprising treatment ^{of the waste paper} with the enzyme component system of claim 101, whereby the reaction of the enzyme component system is carried out at pH 7 to 11, at a temperature from 20° to 95 °C, in the presence of oxygen or air at atmospheric pressure or slightly positive O₂ pressure (up to 2 bar), wherein system component 1 is lipase from *Humicola lanuginosa*, at a concentration from 5 to 500 mg; system component 2^h one or more fatty acids, C₆ to C₂₆, at a concentration from 5 to 2000 mg; system component 3^h peroxides at a concentration from 5 to 5000 mg (100%); system component 4^h ketone at a concentration from 5 to 2000 mg, and that, to change the optimum pH for the printing ink removal reaction and to affect the swelling behavior of the waste paper, a phenolic or polycyclic substance with several oxidizable hydroxyl groups, is used at a concentration from 1 to 2000 mg, in each case based on 1 kg of air-dried waste paper.

142. (currently amended) The method of claim 141, whereby a reducing agent such as sodium bisulfate, sodium dithionite, ascorbic acid, a thiol compound, mercapto compound or glutathione, is added at a concentration from 0.1 to 1000 mg per kg of air-dried waste paper.

143. (currently amended) The method of claim 141, whereby, to collect the printing ink particles and to produce foam during flotation, a commercial collector, is used at a concentration from 1 to 5000 mg per kg of air-dried waste paper.

144. (currently amended) The method of claim 141, whereby additional enzymes selected from the group of hydrolases consisting of cellulases, xylanases, mannanases, pectinases and from the group of oxidoreductases are added.

145. (currently amended)) ^{Am} ~~A process as an enzymatic oxidation system in organic synthesis,~~ ^{process} comprising oxidative treatment with the enzyme component system of claim 101, whereby the reaction of the enzyme component system is carried out at pH 2 to 11, at a temperature from 20° to 95 °C, in the presence of oxygen or air at atmospheric pressure or slightly positive O₂ pressure (up to 2 bar), wherein system component 1 is lipase from *Humicola lanuginosa* at a concentration from 0.05 to 5 mg; system component 2^h one or more fatty

acids, C_6 to C_{26} , at a concentration from 0.05 to 100 mg; system component 3, peroxides at a concentration from 0.05 to 100 mg (100%); system component 4, ketone at a concentration from 0.05 to 100 mg, the concentrations in all cases being based on 10 mmoles of substrate.

146. (currently amended) The method of claim 145, ^{wherein the substrate is} whereby an aromatic alcohol or an aromatic methyl compound is used as the substrate for the oxidation reaction according to the invention.

147. (currently amended) A process for the enzymatic liquefaction of coal, comprising treatment ^{of the coal} with the enzyme component system of claim 101, whereby the reaction of the enzyme component system is carried out at a pH from 2 to 11, at a temperature from 20° to 95°C, at a coal slurry consistency from 0.5 to 40%, in the presence of oxygen or air at atmospheric pressure or a slightly positive O_2 pressure (up to 2 bar), wherein system component 1 is lipase from *Humicola lanuginosa* at a concentration from 0.05 to 20 mg; system component 2, one or more fatty acids, C_6 to C_{26} , at a concentration from 0.05 to 100 mg; system component 3, peroxides, is at a concentration from 0.05 to 50 mg (100%); system component 4, ketone at a concentration from 0.05 to 100 mg, in each case based on 1 g of coal (lignite).

^{of a washing solution}
148. (currently amended) A process for the enzymatic detergent bleaching ^{treats the washing solution} comprising treatment with the enzyme component system of claim 101, whereby the reaction of the enzyme component system is carried out at a pH from 2 to 12, at a temperature from 20° to 95°C, in the presence of oxygen or air at atmospheric pressure or at a slightly positive O_2 pressure (up to 2 bar), wherein system component 1 is lipase from *Humicola lanuginosa* at a concentration from 0.05 to 20 mg; system component 2, one or more fatty acids, C_6 to C_{26} , at a concentration from 0.05 to 50 mg; system component 3, peroxides at a concentration from 0.05 to 50 mg (100%); system component 4, ketone, at a concentration from 0.05 to 50 mg, in each case based on 100 ml of washing solution.

149. (currently amended) The method of claim 148, whereby the system is added to a detergent formulation with all its technically common and known detergent substances or detergent additives.

150. (currently amended) A process for the enzymatic bleaching and/or decolorizing textile fabrics ^{including wool} comprising treatment with the enzyme component system of claim 101, whereby the reaction of the enzyme component system is carried out at a pH from 2 to 11, at a temperature from 20° to 95°C, at a fabric density from 0.5 to 40%, in the presence of oxygen or air at atmospheric pressure or at a slightly positive O_2 pressure (up to 2 bar), wherein system component 1 is lipase from *Humicola lanuginosa* at a concentration from 0.05 to 10 mg; system component 2, one or more fatty acids, C_6 to C_{26} , at a concentration from 0.05 to 20 mg; system component 3, peroxides at a concentration from 0.05 to 20 mg (100%); system component 4, ketone at a concentration from 0.05 to 20 mg, in each case based on 1 g of denim fabric.